

## **AMENDMENTS TO THE CLAIMS**

Claims 1-9 and 11-19 remain pending in the application. Claims 10 and 20 have been cancelled. This listing of claims will replace all prior versions, and listings, of claims in this application.

## **LISTING OF CLAIMS**

1. (Current Amended) Apparatus for a communication system in which space-time encoded data is transmitted at a first location and at least at a second location for communication to a receive station, ~~an improvement of apparatus for the said~~ receive station for decoding the space-time encoded data received thereat, said an apparatus comprising:

a decoder coupled to receive indications of the space-time encoded data received at the receive station, said decoder for directly combining values of the space-time encoded data transmitted from different ones of the first and at least second locations to the receive station and for detecting values of symbols of the data, once combined.; and  
wherein the values of the space-time encoded data transmitted at the first location and values of the space-time encoded data transmitted at the second location are correlated with one another and wherein said decoder includes a matched filter for performing successive matched filter operations upon the indications of the space-time encoded data received thereat.

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2. (Original) The apparatus of claim 1 wherein the space-time encoded data transmitted at the first and at least second locations comprises a space-time encoded block of data, and wherein said decoder directly combines values of the space-time encoded block.

3. (Original) The apparatus of claim 2 wherein said decoder further forms a sequence estimate, the sequence estimate formed of detected values of the data, once combined.

4. (Original) The apparatus of claim 1 wherein the communication system comprises a radio communication system, wherein the first location at which the space-time encoded data is transmitted comprises a first antenna transducer, wherein the second location at which the space-time encoded data is transmitted comprises a second antenna transducer, the second antenna transducer spaced apart from the first antenna transducer, wherein the receive station comprises a radio receiver, and wherein said decoder is coupled to receive indications of the space-time encoded data received at the radio receiver.

5. (Original) The apparatus of claim 4 wherein the space-time encoded data transmitted at the first antenna transducer is transmitted upon a first communication path to the receive station, wherein the space-time encoded data transmitted at the second antenna transducer is transmitted upon a second communication path to the receive station, wherein the receive station comprises at least one receive-antenna transducer coupled to transduce indications of the space-time encoded data transmitted upon the first and second communication paths, respectively, into electrical form, and wherein the indications of the space-time encoded data to which said decoder is coupled to receive are in electrical form, subsequent to reception at the receive-antenna transducer.

6. (Original) The apparatus of claim 1 wherein the directly-combined values of the space-time encoded data formed by said decoder comprise a real-valued component portion and an imaginary-valued component portion.

7. (Original) The apparatus of claim 6 wherein detected values of the symbols of the data, once combined, formed by said decoder comprise a detected value of the real-valued component portion and a detected value of the imaginary-valued component portion.

8. (Original) The apparatus of claim 7 wherein the receive station further comprises a detected-data value operation for operating upon detected data, the detected data upon which said detected-data value operates comprised of the detected values of the symbols formed by said decoder.

9. (Original) The apparatus of claim 8 wherein the detected values of the symbols formed by said decoder comprise at least a first block of space-time decoded data symbol values.

10. (Cancelled) The apparatus of claim 1 wherein the values of the space-time encoded data transmitted at the first location and values of the space-time encoded data transmitted at the second location are correlated with one another and wherein said decoded includes a matched filter for performing successive matched filter operations upon the indications of the space-time encoded data received thereat.

11. (Current Amended) A method for communicating in a communication system in which space-time encoded data is transmitted at a first location and at least a second location for communication to a receive station, ~~an improvement of a~~ ~~said~~ method for decoding the space-time encoded data, once received at the receive station, ~~said method~~ comprising:

directly combining values of the space-time encoded data transmitted from different ones of the first and at least second locations to the receive station; ~~and~~

detecting values of symbols of the data, once combined during said operation of directly combining values of the space-time encoded data; and

wherein values of the space-time encoded data transmitted at the first location and values of the space-time encoded data transmitted at the second location are correlated to one another and wherein said method further comprises an operation of performing successive matched filter operations upon the indications of the space-time encoded data received thereat.

12. (Current Amended) The method of claim 11 wherein the space-time encoded data transmitted at the first and at least second locations comprises a space-time encoded block of data and wherein said operation of directly combining values of the space-time encoded data comprises directly combining values of the space-time encoded block.

13. (Current Amended) The method of claim 12 further comprising the an operation of forming a sequence estimate, the sequence estimate formed of detected values of the data detected during said operation of detecting values of symbols of the data.

14. (Current Amended) The method of claim 11 wherein the communication system comprises a radio communication system, wherein the first location at which the space-time encoded data is transmitted comprises a first antenna transducer, wherein the second location at which the space-time encoded data is transmitted comprises a second antenna transducer, the second antenna transducer spaced apart from the first antenna transducer, wherein the receive station comprises a radio receiver, further comprising the operation said operation comprising the further operation, prior to said operation of directly combining, of receiving indications of the space-time encoded data at the radio receiver prior to said operation of directly combining values of the space-time encoded data.

15. (Current Amended) The method of claim 14 wherein the space-time encoded data transmitted at the first antenna transducer is transmitted upon a first communication path to the receive station, wherein the space-time encoded data transmitted at the second antenna is transmitted upon a second communication path to the receive station, wherein the receive station comprises at least one receive antenna transducer and wherein said operation of receiving indications of the space-time encoded data comprises transducing said indications of the space-time encoded data transmitted upon the first and second communication paths, respectively, into electrical form.

16. (Current Amended) The method of claim 11 wherein directly-combined values of the space-time encoded data formed during said operation of directly combining values of the space-time encoded data comprises a real-valued component portion and an imaginary-valued component portion.

17. (Current Amended) The method of claim 16 wherein detected values of the symbols of data detected during said operation of detecting values of symbols of the data comprise a detected value of the real-valued component portion and a detected value of the imaginary-valued component portion.

18. (Current Amended) The method of claim 17 further comprising the operation of operating upon detected data formed during said operation of detecting values of symbols of the data.

19. (Current Amended) The method of claim 18 wherein the detected values of the symbols ~~formed during said operation of decoding~~ comprise at least a first block of space-time decoded data symbol values.

20. (Cancelled) The method of claim 11 wherein values of the space-time encoded data transmitted at the first location and values of the space-time encoded data transmitted at the second location are correlated to one another and wherein said method further comprises the operation of performing successive matched filter operations upon the indications of the space-time encoded data received thereat.